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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/556,693	04/21/2000	Ralf Bohnke	450117-02477	6440

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EXAMINER

LUGO, DAVID B

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 07/09/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/556,693

Applicant(s)

BOHNKE ET AL.

Examiner

David B. Lugo

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5,10,12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5,10,12 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/7/04 has been entered.

Response to Arguments

2. The previous rejections of claims 5, 10 and 12 under 35 U.S.C. 112, second paragraph, and claim 10 under 35 U.S.C. 101 have been withdrawn. However, new grounds of rejection are made below in view of the newly amended claims.

Specification

3. The abstract of the disclosure is objected because in the third line, "course frame detection" should be --coarse frame detection--. Correction is required. See MPEP § 608.01(b).

Claim Objections

4. Claims 5, 10, 12 and 13 are objected to because of the following informalities:
- a. Claim 5, line 16, "64 point IFT" should be --64 point IFFT--.
 - b. Claim 5, line 17, "the remaining inputs of the IFT" should be --remaining inputs of the IFFT--.
 - c. In each of claims 5, 10, 12 and 13, "S1" through "S12" should be defined.
 - d. In claim 10, line 18, claim 12, line 16, and claim 13, line 17, "the remaining" should be --remaining--.

Art Unit: 2634

e. Claim 12, line 7, "first part the at least one second part" should be --first part and the at least one second part--.

f. Claim 13, line 4, "a AGC control" should be --an AGC control--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 5, 10, 12 and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

7. Applicant claims an OFDM system where a preamble having a first and a second part is transmitted, in which "the frequency domain sequence of the at least one first part is set depending on the frequency domain sequence of the at least one second part such that a second autocorrelation peak mainly generated by the second part of the preamble is optimized." However, applicant does not disclose how information regarding the frequency domain sequence of the second part is used to set the frequency domain sequence of the first part such that a second autocorrelation peak generated by the second part of the preamble is optimized. Without describing how the frequency domain sequence of the first part of the preamble is set based on the frequency domain sequence of the second part of the preamble, one of ordinary skill in the art would not know when the second autocorrelation peak generated by the second part of the

Art Unit: 2634

preamble is optimized unless all possible combinations for sequence values of the first sequence have been exhausted, and would thus result in undue experimentation. Although applicant shows an example of a first sequence portion (page 8, lines 4-5) that would result in improved autocorrelation properties of a second autocorrelation peak generated by a particular second sequence portion, shown in page 8, lines 20-21, applicant does not show how those values are determined based on the second sequence portion. Further, applicant does not describe how a first sequence portion of a first part of a preamble is generated to optimize a second autocorrelation peak generated by a second part of the preamble where the frequency domain sequence of the second part, in general, is denoted by S1, S2,..., S12, as claimed.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 5, 10, 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Regarding claims 5, 10, 12 and 13, applicant claims that "a second autocorrelation peak mainly generated by the at least one second part of the preamble is optimized". Use of the term "is optimized" renders the claims indefinite, since, although the second autocorrelation peak may be improved from the prior art, the phrase "is optimized" implies that it is improved to the highest extent possible. An optimal second autocorrelation peak is not well defined in the art such that one of ordinary skill would be able to recognize when the peak is optimized as there may be autocorrelation peaks having better characteristics than that provided by the invention.

Art Unit: 2634

11. Further, claim 13 is drawn to a “method for generating and transmitting a broadcast burst preamble”, but does not disclose any steps for performing the method. Since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. It is unclear whether the portion of the claim in the “wherein” clause includes the method steps, and applicant is kindly requested to explicitly state what steps the method “comprises”. A claim is indefinite where it does not recite any active positive steps delimiting how method is actually practiced.

Claim Rejections - 35 USC § 101

12. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

13. Claim 13 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2634

15. Claims 5, 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al. (previously cited) in view of applicant's disclosure of prior art.

16. Regarding claims 5, 10, 12 and 13, Mizoguchi et al. disclose an OFDM system synchronization preamble structure for the synchronization of a receiver of an OFDM transmission system comprising a burst preamble having a first part and a second part (Fig. 2b), where the burst preamble is received and autocorrelated, the first synchronization symbol is used as a start symbol required for detecting data (p. 126, section III), considered to be used for a frame detection, and the repetition signal is used for timing and frequency synchronization (p. 126, section IV, subsection 4.1 to p. 127 subsection 4.2), the first part and the second part contain inverse Fourier transformed frequency domain sequences of complex symbols (Fig. 1), the first part is considered to be set depending on the second part, as they are set to be identical, and a correlation value of the repetition signal is obtained to determine symbol timing (p. 127, subsection 4.2, first paragraph), where the correlation is considered to be optimized.

17. Mizoguchi et al. do not expressly disclose the time domain signal of the synchronization preamble is generated by mapping frequency domain sequences of 12 complex symbols to a 64 point IFT, the sequence of the second part depicted at the end of the respective claims.

18. However, applicant discloses in their discussion of prior art a second part of a preamble in page 2, lines 8-9 of the instant application, which can be represented by the specific sequence depicted in the claims, and according to the known concept, the preamble is generated by mapping frequency domain sequences of 12 complex symbols to a 64 point IFT (see page 3, lines 16-18 of the instant application).

Art Unit: 2634

19. It would have been obvious to one of ordinary skill in the art to use the second part of the preamble described in applicant's disclosure of prior art in the system of Mizoguchi et al. as a matter of design choice.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David B. Lugo** whose telephone number is **(703) 305-0954**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at **(703) 305-4714**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

P.O. Box 1450

Alexandria, VA 22313-1450

or faxed to:


(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

dl

6/23/04


YOUNG T. TSE
PRIMARY EXAMINER